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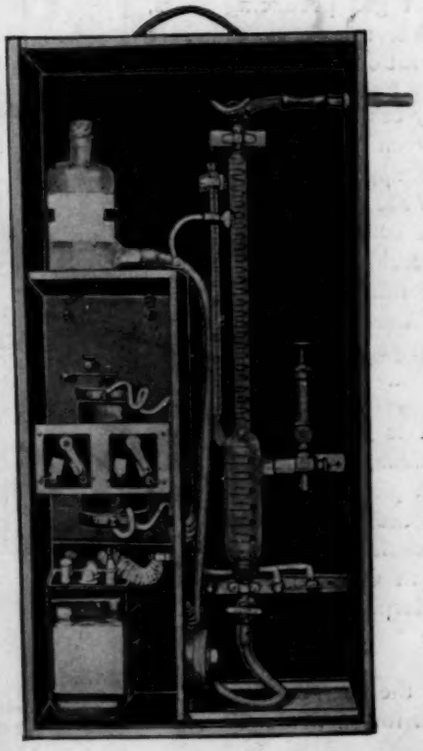

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ADVERTISERS' INDEX, PAGE 35

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American Gas Journal

SIXTY-THIRD YEAR

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American Gas Journal

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Vol. 116, No. 24 NEW YORK, JUNE 17, 1922 Whole No. 3354

Results of the Norfolk Gas-Rate Plan

What Two Years' Operation Shows

By CHARLES B. COOKE, JR., Kelly, Cooke & Co., Philadelphia

Probably no other period in the history of American utilities has so well advertised the legitimate needs of service companies as the past four or five years of excessive operating and capital costs. Rate advances have been generally allowed, not always, it is true, to the extent desired, but usually in amounts sufficient to enable companies to get by under peak-cost conditions. It has been impressed upon both commissions and companies that essential permanent relief is not always procurable through mere rate increases. Also where needed revenues can be obtained in this way, a question of public policy enters the problem of rate adjustment to the extent that companies have often been satisfied to accept less than their real needs in order to minimize or prevent unfavorable reactions affecting public sentiment and development of their business.

Our readers will be interested in this exposition of the operation of the Norfolk Gas Company under a most up-to-date and logical system of rate making. The facts contained in this article will, we are sure, be of real service.—Editor.

Such considerations, which are always important factors in any situation calling for rate increases, assume an added importance in periods marked by sudden and abnormal advances in various classes of service costs. Companies and commissions have seen the dangers in maintaining rate scales which may be excessive in the public mind even though fully justified by rises in the cost of service and, recognizing the instability of conditions responsible for cost increments, have sought methods of relief that would tide companies over fluctuating periods through fair distribution of cost differentials between the company and the users of its service.

The attempt toward rates based on cost of the service has had its broadest application in certain street railway situations wherein "service at cost" or, what is really meant, "service at a fixed profit," franchises have been developed and applied with this end in view. Electric-service companies have furnished more numerous instances of a narrower application of this "cost-differential" principle in the "coal-clause" adjustments which have been frequently approved by commissions as a means of distributing equitably the variations in cost of a major item in the operating expenses of these companies.

In the case of water gas companies, however, there have been but comparatively few instances in which oil clauses have been made a part of gas-rate schedules applied to general public service, in spite of the fact that welfare of these companies is largely dependent upon the cost of the single item of oil, which may be classed broadly as a speculative commodity.

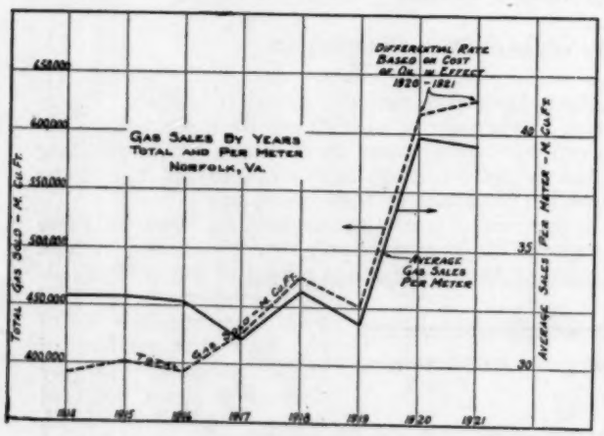
Need Not So Apparent

In the case of coal gas companies the need for protective differentials covering the coal item is not so apparent, as coal prices are largely governed by costs of production and transportation which are not subject to sudden changes nor to the "supply and demand" factors, which probably have more to do with the price of oil than the factors of cost in its production and distribution. While it is true that coal costs are more likely to move slowly to higher, rather than to lower, levels (barring current flurries) as depletion progresses, changes in gas rates on this account may be obtained through the usual procedure as and when the necessity therefor becomes apparent. It is, however, probable that improvements in carbonization processes and more general use of by-product coke ovens as specially adapted to city gas supply, together with the tendency toward more economical heating standards, will more than neutralize the effect of higher coal prices in future periods and will tend to minimize cost of gas to the consumer, with corresponding benefits to the gas company, resulting from this commercial stimulus. On account of these basic conditions, the likelihood of coal-price variations as to

amount and frequency is not such as would justify automatic adjustment therefor in gas-rate schedules to the extent that justification exists for the "oil differential" in rates for water gas service.

A Striking Example

One striking example of the application of the cost-differential principle to the revision of gas rates in the unstable cost period following the war is to be found in the adjustment of the rate question which



arose between the City Gas Company and the city of Norfolk, Va. The settlement of this case received some publicity at the time as an illustration of what could be done in adjusting these questions proceeding upon a common-sense rather than controversial basis.

The City Gas Company had requested a 30 per cent increase in base net rate from $1.20 to $1.60 per thousand cubic feet, the amount of this developing, of course, some public opposition. Detailed investigations made by the writer as consulting engineer for the city established cost results reflected in condensed form, Table I. The verified figures for calendar year 1919 indicated a substantial drop in operating costs as compared with the preceding fiscal year, which decrease if continued might have permitted the company to get by without disturbing its rates. It was found, however, that the company faced future operation subject to violent fluctuations in oil costs and was starting the new year with a "sliding scale" oil contract which established an initial cost of oil nearly double that of the preceding year.

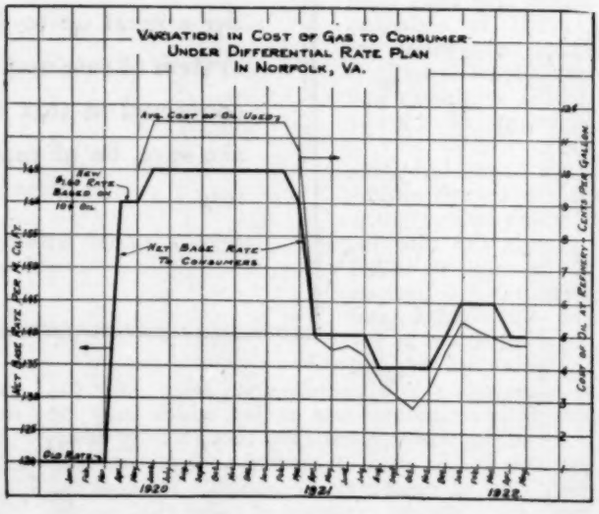
Fixed Rate Not Feasible

This fact alone gave an entirely new aspect to the case, as beyond a doubt the oil-cost factor practically governed fixation of a proper rate and under conditions in the oil market at that time no safe or reasonable forecast of this controlling item could be made. Establishment of a fixed rate under these circumstances would in the end have penalized either the company or its customers—a condition productive of further litigation which city and company desired to avoid as adverse to both public and corporate interests.

The company's contract provided for purchase of oil at a 10-cent base at the refinery with adjustment plus or minus at the rate of ⅛ cent per gallon per 5-cent change of Pennsylvania crude quotations above or below $5.50 per barrel. The fact that the company had previously changed its "prepay" meters over to the regular type invited incorporation of a differential clause in the rate schedule that would automatically charge or credit the consumer with plus or minus variations in oil costs with respect to the contract base. With gas rates to the consumer fixed on the basis of 10-cent oil the above contract differential justified a differential in the rate to the consumer of 5 cents per thousand cubic feet for each whole 1¼-cent increase or decrease in the cost of oil with respect to the 10-cent base. This "oil-clause" differential was included by the State Corporation Commission in its order approving the new gas schedules recommended by city representatives.

An index of the importance of a small variation in the cost of oil in the Norfolk situation is furnished by the fact that a difference of only 1¼ cents per gallon is equivalent to an 8 per cent return on about $400,000 of physical property value. In other words, an advance of 1¼ cents in the price paid by the company for its oil would have about the same weight in the fixation of the rate as an addition of $400,000 to the value of the property for rate-making purposes, and vice versa.

Gas service of 580 B.t.u. average standard has now been provided in Norfolk for a little more than two years under this differential rate plan, which provides a fair basis for judging as to its value from the public and company viewpoints. Chart figure shows variations in the weighted average cost of oil used by months since the rate plan was made effective, together with the resulting variations in rate charged


Variation in Cost of Gas to Consumer Under Differential Rate Plan In Norfolk, Va.
Avg. Cost of Oil Used
New Base Rate To Consumers
Old Rate
1920
1921
1922

the consumer, as indicated by the heavy black line. Changes in the rate have in all cases followed variations in oil cost except where differentials in the latter have not been large enough to register as a 5-cent step plus or minus in the rate per thousand cubic feet.

The Effect of Quotations

Quotations on Pennsylvania crude maintained their high level at $6.10 during most of 1920, and

Table I—Operating Expenses per Thousand Cubic Feet Sold

	Years Ended June 30						Year Ended Dec. 31,
	1914	1915	1916	1917	1918	1919	1919
Production	$0.375	$0.353	$0.334	$0.356	$0.770	$0.947	$0.678
Distribution	0.098	0.101	0.093	0.097	0.088	0.120	0.144
Commercial	0.033	0.032	0.036	0.038	0.038	0.045	0.043
General and miscellaneous	0.052	0.060	0.078	0.121	0.093	0.120	0.115
Taxes	0.033	0.032	0.035	0.050	0.051	0.041	0.044
Operating expenses and taxes	$0.591	$0.578	$0.576	$0.662	$1.040	$1.273	$1.024

were reflected in a maximum gas rate for Norfolk of $1.65 in effect until Feb., 1921. Declines in the oil market which started in Jan., 1921, began to have their effect on Norfolk pocketbooks in March, when the gas rate was reduced 5 cents. This was followed in April by another reduction of 20 cents and in August by a further decrease of 5 cents to a net rate of $1.35 per thousand cubic feet representing a drop of 30 cents from the peak rates of 1920. In the beginning of 1922 the rate was advanced 10 cents to $1.45 which, however, was later decreased in April to $1.40.

Aided in Critical Period

In this manner the company has passed safely through a critical period in which, lacking the relief afforded by the "oil adjustment," it would have sustained losses which would have retarded indefinitely the rehabilitation and extension of its service facilities. Needed additions and betterments to generating plant, distribution and metering system were financed through issue of securities which the company was able to sell locally in view of its renewed earning power and credit established through this method of rate increase.

The following table shows the remarkable recovery in net income after operating expenses and fixed charges, in the two years following the new rate plan as compared with the two years preceding the change:

Net Income After All Charges Except Stock Dividends

1918	$5,126
1919	65,219
1920	93,720*
1921	168,769†

*Rate increase to $1.60 effective April 1, 1920.

†Average rate in 1921 was $1.45.

It is of interest to note that the increase of 1921 over 1920 was mainly due to decrease in operating expenses resulting from plant improvements financed through re-established credit. It is also significant from the public viewpoint that the company was able to develop earnings in 1921 equivalent to about 8 per cent on the value of its property and during the same period to reduce its rates to an average of $1.45 per thousand cubic feet as compared with the $1.65 rate effective during most of the preceding year. Chart figure illustrates the notable increase in volume of service sold in 1920 and 1921 over prior years upon the basis both of gross sales and average sales per meter. The latter has shown an advance of 25 per cent from about 32,000 to 40,000 cu. ft. per meter, most of which is due, first, to improved line pressures stabilized and standardized through elimination of leaks and clogged mains and through installation of pressure equalizing mains connecting dead ends, and second, to more accurate meter registration, which deteriorated during the war period on account of physical impurities in the gas.

These facts demonstrate beyond reasonable doubt that the form and amount of rate increase designed to meet the Norfolk conditions have produced no sentiment adverse to the use of the company's service as sometimes happens following substantial advance in service charges. In fact, the reasonable conclusion to be drawn from study of financial results and improved character of service as to pressure and quality of gas, taken in conjunction with the popular appeal in decreasing rate scales without litigation and controversy, is that an increasing favorable sentiment arising through these causes has had a stimulating effect not only upon the company's earnings but as well upon its capacity to render an adequate and satisfactory service.

Colonel Fogg at Plumbers' Convention

Upon the invitation of the president of the National Association of Master Plumbers the American Gas Association was represented by the secretary-manager at the recent convention held in Detroit, where he presented the fraternal greetings of the A. G. A. and said that with the awakening of a new spirit of commercial development within the gas industry the feeling had become pronounced that much could be done of mutual benefit in promoting more friendly relations and closer business co-operation between the plumbing trades and the gas industry. While in some sections the plumbers have been drawn into close relation with the gas companies, this condition cannot be said to be general, and it is felt that there will be much benefit resulting from the establishment of closer relations between industries which, at least along the lines of new-business development, have so much in common.

The reception accorded to the representative of the A. G. A. and the subsequent interest shown in the matter lead to the belief that some practical plans will be developed leading to the desired end.

Ash Fusion Gas Producer

Detailed Description by M. A. Fichet, "Journal des Usines a Gaz," 1922, pages 1 to 7

In burning coal in a gas producer, it is essential that the combustion is complete. A sufficient supply of air is required for the fulfillment of this condition. It is necessary to have an excess of air and, of course, a minimum so that the gas produced and intended for use in heating furnaces is at as high a temperature as possible. Various mechanical devices have been employed in the effort to secure complete combustion. All sorts of automatically operated grates, complicated combustion chambers, variously arranged air ports, etc., have been used with varying degrees of success.

In the reports of the Academie des Sciences in 1842, there is found a description of a gas producer, in which the desired complete combustion is attained without the disadvantages of the other more complicated types of producers. This apparatus, invented by Ebelmen, burns the coal to fusion of the ash, so that every particle of combustible matter is consumed. The producer resembled a small blast furnace, being provided with a crucible, boshes and shaft. The air blast was blown into the crucible through suitable tuyeres. The fuel was charged at the top and gradually worked its way down to the crucible. The rate of combustion was very fast, which is a very important point. It was figured out to be about 600 kilos per hour per square meter cross-sectional area of the crucible at the tuyere zone. The very high temperature at that point results in the fusion of the ash and the formation of a slag, which is discharged through a tap hole at the base of the crucible. The fuel used was charcoal.

The operation of the apparatus was studied very carefully and the conditions of its most favorable use were determined from the results of actual operation on an industrial scale. Its immediate success was all that could be desired, but after the death of the inventor the apparatus fell into complete disuse.

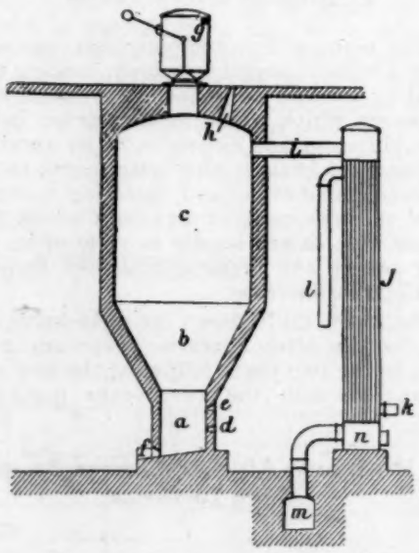
Need in Metallurgical Plants

The need of an efficient gas producer for use in metallurgical plants, one which will permit the economical consumption of the fuel and be capable of gasifying several tons of coal per hour, led the author to rebuild the Ebelmen apparatus and test it out in a metallurgical plant. The results obtained were very gratifying and of considerable importance. The experience of the author with this apparatus is given in the following:

One of the first changes found to be necessary in the old design of the producer was an increase in the cross-sectional area of the crucible. This was found to be most advantageous at one to two square meters. The details of the apparatus are seen in the accompanying diagram. The diagram shows the producer equipped with a bank of tubes, in which the heat in the gases leaving the producer is used to preheat the air employed in the combustion of the fuel in the producer. In this case the fuel was gas coke. The gas produced was used in heating a steam boiler.

In the figure, a is the crucible, b the boshes and c the shaft of the producer. The tuyeres, carrying the air blast, are seen at d and those carrying the steam blast at e. The molten slag runs out through the tap hole f. The coke is fed to the producer through the charging hopper g. In the cover of the producer there is provided an opening h for introducing a tool for prodding the charge. The gas produced leaves the apparatus at i. J is the air preheater. The cold air enters at k and the heated air leaves at l. The air conduit is shown at m and n is a dust chamber for catching such dust as is contained in the air.

After the tests were started, it was learned that there was a small forge in Savoy which was using an apparatus of this character. This was examined and it was found that the apparatus had been in operation for over twenty years. Coal was used as fuel and a perfectly liquid slag was produced by the fusion of the ash. The fused slag was discharged through



three tap holes once every three to four hours without interrupting or adversely affecting the operation of the producer.

The observation of such a producer in actual operation confirmed the writer's opinion as to the practicability of the apparatus and led him to continue his experiments on a large scale. One of the first improvements made was the elimination of the use of steam and hot air. It was found that complete fusion of the ash could be effected with the use of cold air, but this cannot be done with every coal. In some coal the fusion point of the ash is considerably higher than in others. In a number of coals tested it was found that the ash fusion temperature varied from 1,178 to 1,500 deg. Cent. In addition, it was found

to be very desirable to lower the melting point of the ash by the addition of fluxes, so as to produce a slag containing the silicates of several bases, alumina, lime, magnesia and the oxides of iron and other metals. The composition of this slag was found to resemble that of common glass.

Fusion of the Ash

Glass requires about 300 calories per kilograms for fusion at 1,300 deg. Cent., and it is assumed that the same quantity of heat is required for the fusion of the slag. A high temperature is necessary to fuse the slag in the crucible, but care must be taken to see that this temperature does not reach the region of the shaft. As is known, the fusion of silicates does not take place in the same manner as that of metals. The latter pass suddenly from the solid to the liquid condition, while the former soften first, then are converted into a pasty condition, and finally melt.

In softening, the material becomes sticky and has the tendency of agglomerating and forming an impermeable mass with the fuel, preventing the passage of the gas through it. Furthermore this pasty mass tends to stick to the walls of the producer. In the pasty fusion the half-melted materials can surround the particles of fuel and subject them to the oxidizing action of the air. There are two dangers that must be avoided at this point. If the material sticks to the hot walls of the crucible then the coal can no longer be fed into the crucible in a regular manner; if the cooled mass becomes covered over with a skin, then the regular course of the combustion is interrupted, the temperature decreases, the mass solidifies and it becomes necessary to break up the congealed mass with a pick, which is a very troublesome procedure

It is for the purpose of avoiding this double danger that steam is introduced at the base of the boshes. When the water vapor comes into contact with the incandescent carbon, it is decomposed with the production of water gas. As this reaction absorbs a considerable quantity of heat, a sudden decrease in the temperature takes place, which allows the fulfillment of the condition that the high temperature of the crucible should not reach into the boshes.

There are therefore three successive stages in the gasification of the coal in this apparatus.

1. In the crucible—the production of producer gas with fusion of the ash.
2. In the boshes—drop of the temperature with the production of water gas.
3. In the shaft—distillation of the coal with the production of illuminating gas.

In the case where coke is used as the fuel, the last step does not exist. The proportion of illuminating gas in the final mixture depends on the nature of the coal, that is, whether it is high in volatile matter or not.

The gas produced from coke containing 15 per cent of ash had the following composition: Carbon monoxide, 41.62 per cent; hydrogen, 1.08 per cent; carbon dioxide, 1.75 per cent; nitrogen, 55.55 per cent. Every kilogram of the coke gave 4,644 kilograms of gas, which had an average calorific power of 6,100 calories. Such a product was obtained with the use of an air blast at a temperature of 300 deg. Cent. and the injection of steam at a point above the lower end of the boshes.

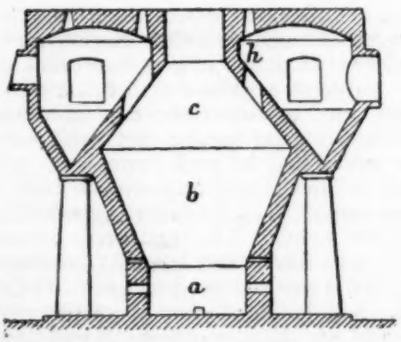
In order to obtain the effective heat value of the gas leaving the gas producer, it is necessary to add the 998 calories in the gas at the temperature of 760 deg. Cent. to the above value of 6,100 calories. On the other hand it is necessary to subtract 230 calories carried out in the hot air, leaving the gas producer at a temperature of 300 deg. Cent. and the 293 calories carried out in the steam. This leaves a final net value of 6,554 calories as the true heating value of the gas.

The Thermal Efficiency

The thermal efficiency of the process is therefore 6,554 calories divided by 6,868 calories, or 95.5 per cent. The 6,868 calories represent the heating value of 850 grams of carbon in 1,000 grams of coal, after the deduction of 150 grams of ash.

It has been mentioned that it is possible to vary the rate of production of the gas to the requirements of the consumption by varying the pressure of the air blast. It is also possible to do even more than this; that is, to stop the operation of the producer altogether for quite a long time, say, from Saturday night till Monday morning. This is done in the following manner: After the crucible is emptied of all the slag that it may contain, by leaving open the tap hole for a considerable time, the blast is discontinued, the tap hole is plugged up with a wad of earth. The tuyeres are removed and the openings are stopped up likewise. The producer remains in this condition until it is ready to start operating again.

In order to start it working again, the tuyeres are put back into place, the tap hole is opened and a blast



of moderate pressure is caused to blow through the apparatus in order to reheat the crucible. When the gas ignites spontaneously and the operation becomes normal once again; the producer is then worked in the usual manner.

It does not appear possible to state at the present time just what maximum capacity the gas producers, operating with fusion of the ash, can attain, but even at this time it is possible to predict the construction of producers capable of gasifying 2,500 kilograms of fuel per hour.

The operation of these producers with fusion of the ash has an additional advantage in that it affords the possibility of utilizing coals of very poor quality, which are absolutely non-usable in ordinary furnaces.

Coke containing as much as 40 per cent ash can still be used in this apparatus, and at that with a good production of gas of good quality. All sorts of coal waste that is now being accumulated at the mines and the breakers can be used to good advantage in this gas producer.

There are now several types of gas producers which gasify coal with fusion of the ash. Among these the Rehmann producer is of particular interest because of the novel construction. This is a German invention and is shown in the following diagram. The crucible is shown at a, the boshes at b and the shaft at c. A hole h is also provided for introducing a tool for raking the coal. The apparatus is a large one. The diameter of the crucible is 2 meters, that at the center of the shaft 3.6 meters. The producer is furnished with air and steam tuyeres. The shaft is surrounded with an annular chamber which is used to catch the dust that may be present in the gas. The cross-sectional area of this chamber is quite large, so that the gas passes through less rapidly. A valve is provided at the side of the chamber to release the pressure in case an explosion takes place.

While it is not certain that this apparatus has been used practically, it represents a distinct advance in design and indicates the interest that is being shown in this type of gas producer. The many advantages that it offers, the simplicity of construction, the ease of operation, the good quality of gas produced, the efficiency of the gasification, the low initial cost, all tend to point to the ash-fusion producer as the logical gas producer of the future.

Good-Will Cornerstone of Utility Business

Editor Tells Public Utility Men of Missouri Some Facts

An address on "The Public Relations of Public Utilities," by J. F. Hull, editor of the Maryville *Tribune* and president of the Missouri Press Association, was the principal feature of the first day's session of the annual convention of the Missouri Association of Public Utilities at Columbia, Mo.

One hundred and fifty operators of public service companies in the State listened to the president of the State press association as he counseled them about the best means whereby the utilities could establish and maintain a good understanding with their customers. The points stressed by Mr. Hull were:

1. Managers of public service companies should keep in close personal touch with their customers.

2. Employees of public service companies should not spare any pains to explain the methods of operation, costs, rates, etc., to customers, explain cause of any failure to render good service and point out ways in which the service may be made better.

3. Public utilities should fully explain facts of operation and seek to obtain and retain the good-will and confidence of the people. The local press offers the best means of accomplishing this essential condition.

"Public confidence and good-will must be the cornerstone in the foundation of every successful business enterprise," said Mr. Hull in opening his address.

"No matter how substantial the materials of efficiency, service, accommodations, that enter into the wall structure, the absence of this cornerstone leaves the foundation incomplete and renders insecure every bit of the superstructure that may be erected.

"Fundamentally, the same principles are involved in the building of the smallest individual business and in the launching of the most elaborate corporate body. It is only in the application of those basic principles that the difference arises. The one-man business is simple. The proprietor is in direct contact with his patrons, has opportunity to correct any misunderstanding that may develop, has occasion to discuss his business problems, his ambitions, his advantages and his disabilities with those individuals who give him their patronage.

"The large corporation is complex. The personal contact between proprietor and customer is gone. All that the corporation can offer to take the place of this human-interest contact is the greater efficiency and lowered cost that come with large volume of business, special buying facilities, great capital.

"But, with all of the advantages that may belong to the multiplied industry, it cannot attain a large success unless it has in its list of assets that intangible item of good-will. And, however, the individual merchant may be handicapped by reason of limited capital and small buying power, his business may grow amazingly when the patrons to whom he caters have confidence in his wares and believe in his integrity.

Value of Public Good-will

"All of which points to the value of the human equation in business. Folks are peculiar. They are as full of notions as a berry is of seeds. Few of them are scientific, many of them are unreasonable, and yet practically all of them are disposed to be fair. Even when they are the most unreasonable, they are actuated only by what seems to them to be perfectly honest and proper motives. Given the facts as they actually exist, explained in candor by those whose past performance justifies their confidence and they are glad to recede from a false position and will go beyond the demands of justice to make amends for any wrongs they may have committed.

"We are in the midst of big developments in all the departments of life. We are emerging from an era of individualism and are attempting to adjust ourselves to the new situation of mass formation. Captains of industry view the great beginnings and persuade themselves that they are the great primary source of created wealth, the guardians of the country's prosperity—and that because of their tremendous importance in the world there can be no limit to the toll they may take, the splendors they may spread.

Majority Favors Private Ownership

"There are many in this country—I believe a very

great majority—who do not favor public ownership of public utilities. They believe that the perpetuity of this civilization is best assured through the development of the personal initiative of an enlightened citizenship—and public ownership discourages individual initiative—submerges the individual and sets up mass rule in his stead. Public ownership of public utilities is the thin wedge with which the Socialist hopes to separate the forces of representative government and make room for the communistic State.

"If there be truth in what I have said, then the tremendous importance of public confidence and good-will in the assets of public utilities may be recognized, and any policy of public relations that will maintain goodwill where it already exists and develop it where it now is lacking, deserves the most serious consideration not only of those of you who have your capital invested in public utilities, but of all citizens of this country who are concerned with the future of our form of government

Companies Must Give Good Service

"First, I shall assume that each of you has a company that is giving its patrons efficient service at a reasonable charge. Added to this primary requisite must be a courteous, obliging, considerate corps of officials, managers, superintendents and employees. With these, your utility is not likely to experience any great amount of unfavorable public sentiment. Without these, the case is absolutely hopeless.

"Intelligent, persistent and consistent publicity is the final ingredient in the potent mixture.

Publicity

"Publicity is an easy word. It sounds so simple that many people do not take it seriously. But it is one of the biggest words in the English language. It has made and unmade statesmen, it has made and unmade Governments, it has made and unmade giant industrial combinations. Publicity—advertising—is the Thor of modern civilization. And just as the thunder god of the old Norse mythology made the valleys and plains by the strokes of his giant hammer, so publicity in this day makes its mark upon the affairs of this old world and shapes the thought and moulds the opinions of all men.

Value of Newspaper Advertising

"If it were given to me to provide the plan for advertising the public utilities of the State, I would proceed substantially as follows:

"First: Series of conferences between the executive heads and all employees of the various utilities. At these conferences the public relations policy of the corporation would be discussed in detail, having as the objective the thorough understanding of the executives and their subordinates in their contact with their patrons. These representatives of the public utility corporations should be thoroughly sold to the idea that they are the corporation so far as the local patrons are concerned and they should never miss an opportunity to talk over with their patrons some of the problems of the company. You know, the man does not live who is not flattered when he is consulted about the other fellow's problems. As nearly as possible, every customer or possible customer should be made to feel that he knows, in an intimate and personal way, something about the difficulties, the ambitions, the plans of the public utility. These suggestions that you talk over your business with a lot of men who know next to nothing about your business may seem trivial and the time so employed all but wasted. But I am reminded of the story of Horace Greeley that often he read some of his more perplexing editorials to the office boy and talked over the points he wished to put over—and Horace Greeley in his day was considered a pretty good editorial writer.

Advertisements and Circulars

"Having prepared the way for better public relations thhrough the local executives and their subordinates, there should be a series of advertisements and circulars and pamphlets prepared in harmony with the work of the men who have contact with the public. These advertisements should set forth with frankness and fairness the things that the utility is doing for the public, the improvements it hopes to make, the difficulties that must be overcome, the supervision as to rates and methods of operation that the law provides, and the many other items concerning the ownership, management, service, etc., in which the people may be interested and in becoming interested they have become, to some extent at last, favorably inclined toward the company.

"The advertising matter so prepared should be given to the various corporations to be used either as prepared or merely as suggestions to aid the individual executive in the preparation of his own copy. Where possible, the advertising matter should be localized—made to fit the peculiar conditions that attend the particular corporation. Each utility company should set aside a certain percentage of its gross income for advertising. The money spent for advertising is recognized as a proper expense item and may be figured into the costs of operation.

"I do not know how much of the annual gross earnings of a public service company should be appropriated for advertising, but if the utility corporation follows the practice of other commercial institutions the percentage will be from 3 per cent to 7 per cent of the annual gross earnings.

Cumulative Effect of Advertising

"This campaign should be long continued. It is the constant advertiser who gets returns. Hundreds of thousands of dollars are wasted annually in this country by the sporadic advertiser. Either get into the game right, spend your money so that it gets results, or stay out and save your money. Hundreds of thousands of dollars are wasted annually in advertising because the copy is not well prepared and because the campaigns are not long enough continued. Don't allow yourselves to believe that the copy of your advertisement can be written hurriedly—it is a message from you to your customers and to those who may become your customers and it costs money.

Newspaper Best Advertising Medium

"While there are many methods of publicity—and all of them more or less good—I believe the newspaper

(*Continued on page* 559.)

Would Regulate Natural Gas Use

Louisiana in Struggle to Curb Operation of Carbon-Black Plants

Introduction of a bill by Senator E. Wayles Browne for the purpose of curbing the operation of carbon-black plants opened June 7 at the session of the Louisiana Legislature for public hearing. The bill, as has already been mentioned in these columns, is almost an exact duplicate of the law enacted by the Wyoming Legislature in 1919, and was selected by Senator Browne because he believes no question as to its constitutionality can be raised in the courts—it having been affirmed by the Supreme Court of the United States.

There is much to interest every gasman in this account of regulatory legislation that has been introduced in Louisiana to control the use of natural gas. Perhaps it is an indication of the path regulation is taking.—Editor.

The hall was crowded with representatives of the oil and carbon-black interests, the New Orleans Association of Commerce, the Department of Conservation, and various other bodies or interests which would be affected in one way or another by the passage of the bill. Senator Browne was the first speaker. He said that the bill would be purely regulatory in character and that its purpose was not to put anyone out of business. The bill, he declared, is in line with the trend of legislation and of jurisprudence throughout the United States which favors a government that benefits the majority. In urging that the right to control the use of natural gas be vested in some regulatory body, Senator Browne pointed out that the State is now controlling the pipe lines and that no complaints have been registered as yet.

Senator Clinton rose to ask if the bill prohibited a producer of natural gas to pipe it out of the State and use it as he saw fit. Senator Browne replied that there was no such provision in his bill; that, as a matter of fact, he did not think such a provision would be constitutional, but if any member of the committee felt inclined to incorporate such prohibition in the bill he would not raise an objection to it.

He produced figures to the effect that in 1921 there were 49,000,000,000 cu. ft. of natural gas used in the United States. This, he explained, was produced by six States, and of the total 32,000,000,000 cu. ft. were produced by Louisiana and 14,000,000,000 by West Virginia. The remaining billion cubic feet was divided between the other four States. He further pointed out that on a capital of $600,000 the carbon-black industry practically doubled its capital every year. He roughly estimated that less than 600 men were employed in the State by the carbon-black industry, most of whom were common laborers.

Labeling this the greatest example of economic waste and economic foolishness that he knew of, Senator Browne compared the mere burning of natural gas for carbon black with the burning of a much smaller amount of the resource of manufacturers employing incomparably larger numbers of men. He concluded by mentioning that the figures of the Department of Conservation showed that the gas fields were depreciating at an immense rate under the use of gas by the carbon-black plants.

M. L. Alexander, Commissioner of Conservation, was the next to speak.

"I wish to say that the Department of Conservation had nothing against any industry or any desire to injure anyone," he said. "I had nothing to do with the introduction of this bill, although Senator Browne conferred with me. I told him that I thought it was highly necessary for the use of natural gas to be regulated and controlled, but that I could not support a measure as drastic as the Wyoming law. He agreed there should be some form of regulation.

"Natural gas should be conserved for domestic consumption and next for industrial development. I went to the Federal Bureau of Mines and had them send expert engineers to Louisiana and make a survey of the gas fields at the expense of the Department of Conservation, and their report was that, of all known gas fields in the world, the Monroe was the greatest."

Commission Alexander explained that during the last several years his department has been very active in conserving this natural resource by curbing its waste in the stoppage of the flowing of wild gas wells. This is not his first appearance before a session of the Louisiana Legislature, and he asserted that he has frequently pleaded with such bodies for necessary laws to stop the waste of natural gas.

"But not until the administration of Governor Parker have we been able to make a survey—at his request—and the results have been startling," he asserted. "We found that ten carbon-black plants manufactured 30,000,000 lb. of carbon black in addition

to large quantities of gasoline. I have always been the friend of the carbon-black interests because I have stood for a square deal for them—not for prohibiting them but for regulating them. We found that they were using 800,000,000 ft. of gas a day and that the fields were being drained. We put into effect a rule that the carbon-black plants should not use more than 20 per cent of the potential production of a well, and they have adhered to this. But we find that yet the drain on the field is too great, far more than would be required to supply the city of New Orleans.

"They pay 3 cents a thousand for the gas, while we find the people of New Orleans paying $1.45 and in Baton Rouge something like $2."

Would Supply New Orleans

Following this, Mr. Alexander quoted figures which covered the estimated cost which would be involved in building a pipe line to New Orleans. This pipe line, in addition to supplying New Orleans with gas, would also place that natural resource within the reach of all towns en route to the Crescent City. Mr. Alexander then asked how the financial end of the pipe-line project could be attended to unless a certain amount of assurance is given that the supply will be protected by the laws of the State to prevent it from becoming exhausted before the amortization of the line is realized.

To effect this end, Mr. Alexander suggested a plan that, from the face of things, seems to be the most fair to all parties concerned. This plan, if carried out, will regulate the consumption of gas by allocating to the various industries depending upon this resource for a continuance of operation a stipulated, equitable and fair distribution of gas—always keeping in mind, however, that domestic use is to be given first consideration.

Classifying this as one of the most serious questions which the legislators would have to pass upon, and requesting that they concentrate all their efforts upon considering it fairly, Mr. Alexander passed on to detailing all the benefits enjoyed by Shreveport by the use of natural gas, leaving it to his auditors to mentally picture similar conditions in New Orleans and towns en route should the pipe line be completed successfully.

"I venture to say," he exclaimed, "that within the last ten years there has not been built in Shreveport a house with a chimney other than used for natural gas, and there are not 10 tons of coal or 10 cords of wood in Shreveport."

Upon being questioned by Senator Wood, Mr. Alexander replied that while the detail of cutting down the use of natural gas to 20 per cent of the potential capacity of the well by the companies engaged in the manufacture of carbon black, the real purpose of the measure had been circumvented in that there was no existing regulation governing the drilling of new wells. The present absence of such a regulation, while making it more expensive for a company to operate, has little or no effect upon the conservation of gas in the earth. He said that the Department of Conservation has no authority to prevent the drilling of more wells, and that neither does the Browne bill carry this authority.

"But the Browne bill," said Mr. Alexander, "will give the department the right to limit the flow from any field, and this would work to the same end, as the companies would not spend $20,000 or $30,000 to drill a new well when a limit was placed on the production."

Support Browne Bill

Succeeding Charles H. Behre, chairman of the industrial bureau of the New Orleans Association of Commerce, and I. W. Sylvester, city engineer for the city of Alexandria, both of whom expressed added support for the Browne bill, the opposition presented its first defense in the person of A. L. Smith, large land owner and planter of Monroe. Mr. Smith said that he hasn't a penny interest in a carbon-black plant or a gas well, and followed this closely with an account of the industrial development of the Monroe field from the advent of the "wildcatters."

Whose Fault Is This?

"They struck gas and went out to sell it," he said, "and made all manner of inducements to get capital to come in and use this cheap fuel. The Monroe Chamber of Commerce has advertised this extensively for the last five years, and what is the result? We have a glass factory at Bastrop that has never made a pane of glass, and a wood-pulp factory at Bastrop which has accomplished nothing but raise a stench. And what do we find now? This effort to drive out the only industry which has come to use our gas—the carbon-black industry."

Mr. Smith expressed his belief that the Browne bill, while preventing the carbon-black industry from operating in Louisiana, would provide for the piping of the gas into Arkansas, where it could be used for the manufacture of the same article. The farmers of the section surrounding Monroe, he said, were saved during times of crop losses by the money they received from the carbon-black plants for their natural gas.

"If New Orleans wants natural gas why don't they come and get it?" he demanded. "We are waiting for them to come; we are anxious for them to come. We wish every family in Louisiana could enjoy the benefits of natural gas."

Bill an Outrage, He Says

Labeling the Browne bill "the greatest outrage in the world to the carbon-black industry," Mr. Smith said he knew of one carbon-black plant which has spent $5,000,000 in establishing its plants and pipe lines. The solution he offers is that of fair competition—that of other industries coming to the fields and outbidding the carbon-black interests.

Upon being asked by Senator Leopold as to the length of time the carbon-black plants have been operating in the Monroe field, Mr. Smith said about four years. In reply to a question as to whether or not anyone in the Monroe district has detected the depreciation of rock pressure, he said that he did not believe anyone there competent to pass judgment. He added, however, that the information he had received on the supply of gas in Monroe's earth differed radically from Mr. Alexander's statement and showed 284 square miles of proved territory, which on a

basis of 100,000,000 ft. a day would last for eighty-seven years.

Former Governor Sanders followed T. H. Trousdale, one of the pioneer prospectors for oil and gas in Ouachita Parish, who said that the people there objected to any measures which would hamper the carbon-black people from coming to them when they could not get anyone else to buy their gas. Mr. Sanders appeared as attorney for the National Gas Products Association, and said:

"No one will say that I am not a conservationist; but there is a difference between conserving and hoarding. When this employment was offered me, last fall, the first thing I did was to go to see Brother Alexander and ask him if he wanted any more laws. He told me he was satisfied with existing laws, and I accepted the employment. Mr. Alexander said, tonight, that the potential capacity of the field is 800,000,000 cu. ft. a day and that under the regulations of his department only 20 per cent is being drawn."

At this juncture he turned to Mr. Alexander and asked for a verification of this statement. The latter replied that he was correct "to some extent," adding that only fifty-two of the wells were in use and that forty-five were capped.

"There it is!" Mr. Sanders exclaimed. "Half of the wells capped!"

"Yes," agreed Mr. Alexander, with spirit; "but the wells flowing are drawing gas from under the wells that are capped."

As an objection to the Browne bill, Mr. Sanders explained that it would place the control of the use of natural gas "at the mercy, the whim or the caprice of some future, unknown commissioner of conservation." He pointed out that, however regretfully, Mr. Alexander some day "might forget himself and die," or, as another contingency, "some future governor may be so derelict in his duty as to fail to reappoint Brother Alexander as Commission of Conservation."

Says West Virginia Has No Law

Disclaiming all prophetic powers but declaring that the future might be judged in terms of the past, Mr. Sanders said that in West Virginia "they have been burning carbon for fifty years and they have never passed laws to regulate or stop it—and, in addition, West Virginia pipes millions of cubic feet of natural gas to other States."

Announcing that he would use Mr. Alexander's figures to support his arguments, he asserted that the Monroe gas field produced 800,000,000 cu. ft. of gas a day. Allowing a margin of 100,000,000 cu. ft., which the carbon-black plants use, there would be more than enough left to provide for the 15,000,000 cu. ft. which will be needed for New Orleans and the other cities of the State—"which," as Mr. Sanders put it, "the smallest well in the district could supply."

As a means to illustrate the extreme measures proposed by the Browne bill, he said that if the same type of conservation were applied to the lumber industry as is now being attempted upon carbon black, the sawmill companies would have to cease operations. The computations of experts, he said, showed that 66 per cent of the forest tree is wasted between its cutting and arrival at the sawmill.

Is a Strait-jacket

"Put the carbon plants in the strait-jacket proposed by this bill and you will drive them out of the State!" he exclaimed. Carbon plants operating in neighboring States and receiving their supply of gas from Louisiana would defeat the purpose of the bill; for, as Mr. Sanders explained, West Virginia had placed a tax on gas piped out of the boundaries of its own State, but the Federal Supreme Court pronounced it illegal and unconstitutional in view of the fact that a State cannot interfere with interstate commerce.

When he announced that the Monroe field had increased in area since last fall and that the rock pressure there was as great as ever, Mr. Alexander rose and disagreed with him.

"I will prove it, then!" Mr. Sanders retorted, reading from what he claimed was the official report of the Government experts who had made the survey of the field for Mr. Alexander. This report, according to Mr. Sanders, said the initial rock pressure of the field was 1,050 and the pressure at the time they surveyed it was still 1,050. Mr. Stroud was called in to settle the dispute, and stated that the rock pressure of the field at present time is 866.

Mr. Sanders stated that the carbon-black plants had saved the people of the Monroe field from financial disaster, had paid all taxes assessed, and had obeyed all regulations placed upon them.

Only the Beginning of Regulation

"Clothe the Department of Conservation with this unreasonable, undemocratic power and I can see further legislation affecting the sawmills and every industry you have," he remarked. "We ask that the Browne bill be defeated. We say that to-day, instead of burning the 20 per cent to which the department has limited us, we are burning less. We say that every regulation that is not confiscatory will be obeyed. Abolish the carbon-black industry if you will, but do not strangle it to death."

Will Discuss Combustion

Dr. R. S. McBride, secretary of the gas and fuel section of the American Chemical Society, announces that the new section will meet with other sections of the society at the fall meeting to be held in Pittsburgh Sept. 4 to 9.

Among the topics to be discussed will be the general subject "Combustion" in the form of a special symposium to be conducted under the chairmanship of Prof. R. T. Haslem, of the Massachusetts Institute of Technology. It will include a program of papers on chemical methods underlying fuel utilization.

Officers of the section are: Dr. A. C. Fieldner, Bureau of Mines, Pittsburgh, chairman, and R. S. McBride, Colorado Building, Washington, D. C., secretary. Dr. McBride has requested that any members of the society having papers to present at the meeting of this section should forward them in full or in abstract form to the chairman or secretary, or should notify these officers regarding their intention to prepare the paper later.

As the Journal Views It

Removal Notice

The "American Gas Journal" is now located in the Dodge Building, 53 Park Place, New York City. Our new telephone number is Barclay 6736.

A "Hello, Jim" Policy

Walter S. Greenough, whose name is familiar to the readers of the AMERICAN GAS JOURNAL, in the course of an address delivered to a bankers' convention had some things to say on developing good-will that, we think, apply to the gas field as well. Mr. Greenough is an advocate of the "Hello, Jim" policy for banks, and we agree with him that turning a financial institution—or, for that matter, a gas company—into a place where first names are in common usage is a mighty good thing.

We know an operator of a large company who frames excellent policies for his employees, but he does not see that they are properly carried out; in fact, exercises no direct supervision at all. The result is that the feeling toward that company in the community served is extremely antagonistic and the policies laid out are useless. It is more than a mere matter of rules and regulations; it is a matter of giving a company a pleasing personality and then seeing that the personality is felt by everyone who comes in contact with either officials or other employees. The successful manager, the one who gets there in the long run and does not skyrocket for a short time, is the one who never relaxes his vigilance in maintaining the pleasant relation which is hard to gain but simple to lose.

Working with the Plumbers

The announcement that the American Gas Association was represented at the recent convention of the National Association of Master Plumbers will be received with a great deal of interest by the gas industry, for it may be that this will lead to co-operation between the two industries that will bring unthought-of advantages to each.

The AMERICAN GAS JOURNAL is strongly in favor of any action that will bring about co-operation between the two industries, and we would even go so far as to advocate the opening of the association to plumbers, either by joining one of the sections now organized—such as the Commercial Section, which it would seem would be most logical—or by establishing a separate section. It seems to us that only great good can come out of any such movement, for it has worked out splendidly in many cases where gas companies are working with the plumbers in their communities, with a resultant good service to the public. As an example of what can be accomplished, we would point to the progress that has been made in the two Portlands—Oregon and Maine—where associations have been formed and are working in harmony.

We believe that the advantages of having plumbers associated with our national organization are obvious and must appeal to every alert gasman in the country. Take just the one question of appliances. Frequently the complaint is heard that plumbers and other dealers are putting on gas company lines inferior or unsatisfactory appliances, or are hooking up some large consumer of gas without asking for a change in the size of meter. The result is a series of complaints, with the gas company on the receiving end. Now, if through the American Gas Association some of this can be eliminated, then certainly real progress has been made.

We are glad that Colonel Fogg has taken up this matter, and we believe that the gas industry can await the outcome of the movement content in the knowledge that he will carry out the work to its best possible conclusion. We only ask that he be given the completest possible support, that the work may be made easier.

American Gas Association Moves to New Offices July 1

On and after July 1 the headquarters of the American Gas Association will be located on the eighteenth floor of the Canadian Pacific Building, 342 Madison Avenue, New York City.

This modern building, on the southwest corner of Forty-fourth Street and Madison Avenue, is within a block of the Grand Central Station and is convenient to the Pennsylvania Terminal and to all principal local transportation routes.

Members will find the new headquarters easy of access and in the heart of New York's hotel and shopping districts, and it is believed that they will offer increased facilities in every way.

Portland Company Publishes Magazine

First Issue Has Wide Appeal

The Portland Gas & Coke Company is issuing a house organ entitled "The Gasco Bulletin." Its first issue appeared in May with the following in charge:

George L. Myers, editor; W. H. Barton, E. L. Hall, J. H. Hartog, L. L. Levings, C. W. Platt, U. O. Rogers, S. E. Skelley, associate editors.

Its leading article is entitled "Recollections of Portland's Early Gas Industry," by E. L. Hall, the general superintendent. It is replete with reminiscences, especially in regard to the flood of 1894.

The *Gasco Bulletin* is not only instructive but is full of interest in the way of personal news items about the different employees.

It has a heart-to-heart talk by J. H. Hartog, the new-business manager, in which he urges all the employees to be sure and use their eyes and see what the company has on display instead of going to work without ever passing through the salesroom. Mr. Hartog is a sincere enthusiast for better appliances, realizing that there is nothing so threatening to the gas industry as cheaply-built appliances.

We feel that the "Gasco Bulletin" has only to maintain the pace it set in its first issue to prove to the patrons of the Portland Gas & Coke Company that service is the aim of every employee. This movement is becoming more and more widespread in the gas industry, with beneficial results.—Editor.

In selecting various ranges as leaders in their line he says, "First, you beheld (if you visited the salesfloor) a stove with a solid top. It's called the 'Smooth-top.' No, the 'Smooth-top' ads did not refer to bald heads or hair tonic, but to a gas range which does not display the burners. They are hidden from view by a solid top of polished metal. If you are a woman, you will immediately conclude that this is the kind of cooking stove you do or will want. Instinct will tell you that the gas fumes, if any, pass up directly into the chimney. Good! Also that you can move your pots and pans about without their catching on a projection and spilling. Good again! And that you can push back a dish that's done where it keeps warm. Oh, joy! It has been the puzzle of every housekeeper how to keep the cooked food warm while she was preparing the next dish. If she put it over an open gas burner, even though turned way down, it would invariably cake at the bottom, if not burn. Even the caking at the bottom meant lots of hard scrubbing when the dishes were washed. The manufacturer therefore provided a simmerer, a little burner which is quite a gas saver and as such fills its niche in the world, but as a warm-keeper it is of little use, for it is invariably put where its use prevents other burners from being used at the same time.

"It is fun to cook. I know, for in Europe it wasn't permitted us children to ever set foot in the kitchen—here in America everyone does as he pleases and sometimes when batching it is all kinds of fun to experiment at playing French chef, only to wind up by being a French fiasco.

"Yes, it's fun to cook—but mighty strenuous to get a meal for the family, especially for guests, and try and keep it all hot without scorching. The 'Smooth-top' overcomes this dreaded difficulty and aside from the question whether or not it is efficient from a scientific standpoint the average woman wants it.

"Then you will have noticed a very handsome piece of furniture, called the 'Chambers Fireless.' If anyone scoffs at fireless cooking you should be able to explain that this gas range has nothing in common with what the world knows as 'fireless cooking,' a thing that was a fad and ran its course. It's called fireless for want of a better name. Thermos oven and hooded burner might have been more correct, but too long.

"The oven is heavily insulated. Open it and see. Knock on its walls and notice their solidity. Then close it and see if you can get the edge of your nails in between. The door fits perfectly all around. Notice the way you lock the door to keep it tight. Reminds you of a vault door. This oven is built to do what all ovens ought to do: that is, keep the heat in. Now notice the gas valve that feeds the burner in the oven and the big handle near it which is used to close the vent in the oven. However, if you closed the vent and left the gas on by mistake it might prove rather unpleasant to your nervous system. So the maker very cleverly designed it so that when you turn this handle to close the vent you also turn off the gas.

"How long does it take a woman to bake a loaf of bread, or an angelfood cake or roast a piece of beef? If you don't know, ask someone. With this 'Chambers Fireless,' after the oven is heated about five minutes, you use just seven minutes of gas after you put your bread in, eleven minutes for angelfood and only seven minutes per pound (instead of fifteen to twenty per pound) for a roast of meat! This, therefore, saves you more than half the gas; yes, about two-thirds. In other words, if your oven bill were $2.40 a month, you'd cut

it to 80 cents, or at least to around a dollar! Now the beauty of this oven is that you don't have to take the food out when it is done. The oven, after the food is cooked, will keep it warm, so that in case you or the family are late your food will be ready to serve.

"It has no clock, as the idea of setting your stuff all in an oven, setting the clock and going away, knowing that when the time comes for the heat to come on it will come on, is of little or no benefit to anyone, except that it may be a mental strain, figuring ahead when you expect to be home. The chances are, when that time comes, you may not be ready to go home; in fact, you may not want to go home or dine at home, at all. Then what? If you think it helps the looks of your range to have a clock around, just hang your wrist watch or the alarm clock on your oven handle. It will do just as much good, less harm, and be a lot less expensive.

"Don't forget that this oven, though splendidly sealed when you shut off the gas and the vent, has had plenty of ventilation through the vent while the food was first being heated and while the chemical change was effected by the heat to which you subjected the food. Without that vent there would be such a smell in the oven that it would not be conducive to good digestion or happy memories. If you want to find out what variety of nauseating odors an unvented oven produces just open the door of an electric oven, especially when meat is being cooked in it.

"Some friend will ask you about the shrinkage of meat in a gas oven. Remember that meat has neither soul nor conscience. The meat is entirely ignorant of the nature of the fuel which is cooking it. It has no bone to pick with the coal man, the wood dealer or the gas company. Then why should it shrink less when heated by electric heat than by any other? The very question will impress on you the foolishness of the argument. Meat shrinks as it is heated and its moisture evaporated. As electricity is expensive heat and was never intended to heat with, it has to be used sparingly and only just enough heat is furnished the oven to get by with. Gas, on the other hand, is so cheaply put into the home that people throw it to the dogs and still their bill doesn't worry them, or if it does they blame it on the meter. This unnecessary excess heat, of course, shrinks the meat more than when it is cooked sensibly.

"The thermostat of the Lorain oven-heat control, which you can see on our Reliable ranges, prevents this unnecessary overheating, as the degrees are all marked on the wheel and you only get just what you set it at.

"Then there is a hood, or maybe two, over the open burners of the 'Chambers Fireless.' Three nesting kettles, forming one circular shape when they are put close to each other, fit under a heavily insulated hood. These are for vegetables, which are started to cook with just a little water, then the hood is lowered down over the nesting kettles, the gas turned off at the same time and the imprisoned heat cooks the vegetables to a turn and, if need be, keeps them warm till you are ready to serve them. The hoods are counterbalanced with a weight so that they lift and lower with a minimum of effort. The gas has to be turned off before the hood can fit down close to the top of the stove—an ingenious little device attends to that."

The *Bulletin* also has articles on sales of preferred stock, as the Portland company has become accustomed to finance its own requirements for extensions by selling its 7 per cent preferred stock to the public at home.

All in all, it is a very creditable publication, especially considering that this was the first number issued.

Good-Will the Cornerstone of Utility Business

(*Continued from page* 553.)

offers the cheapest and best medium for your advertising. And I believe the display advertisement is by far the most efficient form that may be used. In recent years the display advertisement has come into its own because of its sheer merit. It appeals to the reader in a straightforward man fashion that carries conviction. Time was when the advertiser believed he must disguise his message in order that he might get a hearing, so we have the ostensible news story with the advertising matter carefully tucked away between sentences and in indirect suggestion. But that time is happily past.

"The display advertisement in the local newspaper is most efficient because it appears in perfect frankness on the printed page. The reader is not tricked into reading it."

Plumbers Work with Gas Company

On Wednesday evening, June 7, the Northampton (Mass.) Gas Light Company invited all of the plumbers in the territory supplied by them to attend a dinner and a meeting in order to discuss plans for better co-operation.

There were about thirty plumbers who attended the dinner, together with about twelve gas company representatives. The meeting was turned over by Manager E. B. Edwards to Elmer E. Stack, who was requested to serve as chairman of the meeting.

Mr. Stack outlined briefly the purpose of the meeting and told what had been done by a similar movement in other places, such as Lynn, Mass.; Arlington, Mass.; Portland, Me., and other cities where plans are now being laid to start such a movement.

F. A. Woodhead, of the Arlington Gas Light Company, told of the results obtained from the co-operation of the plumbers in the territory supplied by the Arlington company. He stated that the results were beneficial to the plumber, in that he secured increased business due to his more thorough knowledge. It benefited the gas company, in that they had better satisfied customers due to more satisfactory installations which were made correctly and in a manner suitable to their needs.

Mr. Stack then gave an illustrated lecture showing what could be accomplished by thorough co-operation between gas company and plumbers.

The plumbers were so much interested and enthused over the idea that they voted as a body to appoint a committee from their members who would assist a committee from the gas company representatives in making plans to carry out a co-operative movement between the plumbers and the gas company.

That committee has already been appointed and is arranging the details for carrying on this idea.

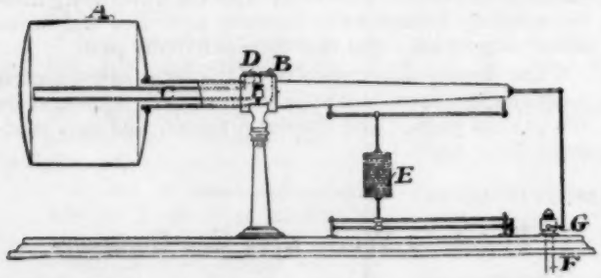
Developments in Gas Technology

Important Information Gathered from All Parts of the World

By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Gas-Flow Regulator

This device is used to secure a standard volume of gas flow per unit of time irrespective of variations in atmospheric temperature and pressure and density of the gas. The flow of gas is controlled by a valve which is regulated by an aneroid capsule, and by means actuated by the density of the gas. The diagram shows a base plate on which is mounted a standard carrying a



weighing beam. One arm is tubular and has screwed to it a chamber A. The inner end is connected to a gas outlet B. D is the gas inlet, connected with a pipe C, which is coaxial with the tubular arm. E is an aneroid capsule such as is used in aneroid barometers. F is a pipe connected to the outlet B and provided with a valve G. In the operation of the device when a gas of greater or less density than the previous gas is passed through the chamber A, the arm of the balance is moved up or down accordingly and the valve G opened or closed. When the barometric pressure decreases or the temperature increases, the beam is tilted by the capsule E, causing the valve G to open more fully. Patented by the South Metropolitan Gas Company. (British Patent No. 176,524.)

Defense of Carbon Monoxide in Gas

The controversy between those who allege that they suffer through the increase in the percentage of carbon monoxide now used in Great Britain in the manufacture of gas and the companies who produce gas continues. The chairman of an important company said the other day that there was no real ground for the restriction on the proportion of carbon monoxide to be used, urged by the public in the supply for the public gas services There could be no reasonable objection to the finding of the departmental committee against fixing any limitation in the quality which might be supplied, though that finding was being challenged. Carbon monoxide was undoubtedly a poisonous gas—more poisonous than pure (so-called) coal gas—but it was not meant to be inhaled; its function was to produce heat.

Dr. Haldane, who was a member of the water gas committee of 1898 which recommended a limitation of 12 per cent, was not prepared to recommend an extension to 20 per cent, on the ground of the improvement in gas fittings of both incandescent and flat flame burners. He could see no virtue in such limitation. Immunity from the results of defective fittings could not be expected from the limitation of the proportion of carbon monoxide. The real remedy was the insistence on more careful and systematic inspection of all house fittings. Referring to the suggestions for further public inquiry he said the country was fairly sick of these inquiries, which were not held under judicial conditions. The public was right in fearing carbon monoxide, but people should realize that the fault lay with themselves; it was from a lack of intelligence, not from carbon monoxide, that the public was suffering.

Water Gas Production in Horizontal Retorts

In comparison with the production of water gas in the generator, the manufacture of the gas in horizontal retorts possesses the advantage that the transportation of the coke is avoided and the provision of a special container is unnecessary and the expenditure of energy in the blast is saved. The author of the article, which appears in the journal, *Gesbeleuchtung*, volume 62, pages 729 to 731, reports his success in making water gas on a commercial scale in horizontal retorts by the introduction of steam after or during the degasification of the coal. From 100 kilograms of coal about 42.5 cubic meters of gas were produced on the average, a maximum of 52 cubic meters (volume measured at 15 deg. Cent.). The gas has a maximum calorific value of 4,234 heat units at 0 deg. Cent. and 760 mm. pressure. The economic details of the process are discussed fully in the article.

Refining Tar Oils

German Patent No. 333,061, which is assigned to the Deutsche Erdoel A. G., is concerned with a process of refining tar oils, particularly the tar oils that are obtained from lignite tar, by the aid of aqueous solutions of the alkalies. The oils are mixed with the solution of sodium carbonate, for example, and the mixture is heated to a temperature of 300 deg. Cent. with the introduction of steam. The steam serves to keep the oil in vigorous agitation. The oils are then entirely distilled under a vacuum.

Ammonium Sulphate

The process described in British Patent No. 176,977 is concerned with neutralization of acid sulphate with simultaneous recovery of the pyridine vapors. This is done by taking advantage of the fact that the ammonia from the fixed ammonia still is free from the impurities which cause the production of discolored sulphate, when the saturator is worked to neutrality or slight

alkalinity and the pyridine is liberated and removed with the waste gases.

Flue Pipes in Gas Boilers

It has always been a great problem to find a suitable material with which to make the flue pipes for gas boilers. Galvanizing the pipe was found to be insufficient protection. Terne plate, lead coated, has been tried but it was found that slight defects in the coating allow the iron to be attacked. Pure lead pipe is prohibitive. Copper pipe is attacked by the sulphur in the gas, but this can be overcome by tinning, an expensive process. Various paints have been tried but they have not stood up well against acid-laden water. A paint which gives as good results as any is made from red and white lead and oil, and air dried. Best material to use for flue pipes is glazed earthenware drain pipes. This is waterproof, weatherproof, it retains some heat, resists cold better than metal and is extremely durable. Its appearance is, however, against it. Recently pipe and pipe fittings have been made of asbestos material finished hard and smooth. (GAS JOURNAL, April 26, 1922.)

Revivifying Gas Purification Material

The gas purification mass is removed from the boxes and treated with water, preferably at a pressure slightly in excess of atmospheric. It is then subjected to the action of a current of steam superheated to above 200 deg. Cent. The final step in the process is to treat the mass with alkali. (See German Patent No. 346,063.)

Heat-Conserving Gas Producer

The shell of the producer is surrounded by a jacket, within which a liquid is circulated at a sufficiently high temperature to prevent condensation of water within the shell and under conditions which avoid generation of steam within the jacket. The liquid may be a heavy oil which circulates through the tubes of a steam boiler, or it may be water under pressure. In the latter case the jacket is connected with an elevated drum provided with a steam dome, and as the water circulates steam is generated in the drum owing to the reduction in pressure. A float arrangement preserves the water level in the drum and the steam generated is added to the air blast. The jackets of several producers may be connected to one drum by the provision of suitable valves in the circulation system. This is a Koppers patent. (See British Patent No. 176,113.)

By-products from Gas

Gas from the carbonization process is delivered from the hot main to a tar separator without reduction in temperature. It then passes through a passage or flue in which it is subjected to a high potential current. This causes precipitation of suspended particles. It goes finally to an ammonia saturator. Patented by the American Coke & Chemical Company. (United States Patent No. 1,408,105.)

Gas Cooker for Pressed-Meat Industry

A special gas-heated boiler was recently designed in England for the pressed-meat industry and said to be the first device of its kind to give satisfaction. In the cooking of pressed meat with condiments and spices, the latter have the effect of discoloring those parts which come into contact with the walls of the utensil, unless those walls are at a higher temperature. The inner pan must always be at the boiling point, while the contents of the surrounding jacket are at a higher temperature.

The boiler is made of cast iron and has an inner pan of forty gallons capacity. Round the inner pan there is a jacket, containing a solution of calcium chloride, having a boiling point of 240 deg. Fahr. A copper feed tank is suspended above the boiler. Circulation is accomplished by difference in temperature of the solution. The heat is provided by a large burner of the concentric type. (See GAS JOURNAL, Supplement, April 26, 1922.)

Book Review

Fuels and Refractory Materials. A. Humboldt Sexton, F.I.C., F.C.S., past president of the West of Scotland Iron and Steel Institute. New edition; completely revised and enlarged by W. B. Davidson, D.Sc., Ph.D., F.I.C. 382 pages. New York, Van Nostrand Company. $4 net. 1921.

This well-known textbook has been brought up to date without many drastic alterations in the original text. Certain chapters, as the ones on "Liquid and Gaseous Fuels," "Testing Fuels and Refractory Materials," have been expanded, modified considerably and corrected to agree with the results of recent experimentation and investigation. The book is an excellent exposition of the theories and practice of combustion. By far the greater part is taken up with fuels, only one chapter being devoted to a discussion of the refractory materials. A few useful tables and a good index are included.

The first two chapters deal with the general theories of combustion, the definite of terms, fundamental calculations of the air required for complete burning and of the calorific power of fuels. Then there follows a short description of the properties of the fuels, wood, peat and coal. The solid prepared fuels are then discussed. Methods of manufacturing them are given, various types of coke ovens are described and compared. A short chapter is devoted to the principle and practice of coal washing. Then the liquid fuels are discussed briefly, particular attention being given to fuel oil. A long chapter follows on the gaseous fuels, the manner of their production, their properties, the advantages and disadvantages of their use. By-products and low temperature carbonization are next in order, and then there is a long descriptive chapter on the various types of metallurgical furnaces. Such subjects as supply of air to the furnace, removal of waste products, smoke and the prevention of smoke receive brief attention. Pyrometry and calorimetry are then discussed, the principles explained, the various types of instruments, including recording calorimeters, etc., are described. Other methods of testing fuels are also included. The book ends with a chapter on the properties, uses, manufacture, requirements of various refractory materials, bricks and crucibles.

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	June 15, 1922 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	107	107½
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	96½	97
Columbia Gas & Elec. Co.	First 5s	May 1, 1927	94½	95
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	108	108¾
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	90	90½
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	116¾	117¼
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	80	81
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	91	93
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	99¼	100
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	98½	99½
Hudson County Gas Co.	First 5s	Nov. 1, 1949	89¼	91
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1934	90¾	92½
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	100	101
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	88	91
Milwaukee Gas Light Co.	First 4s	May 1, 1927	92	92¾
Pacific Gas & Elec. Co.	Gen. & Ref. 5s	Jan. 1, 1942	90	91
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	106	107½
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	95¾	96¼
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	90	91
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	94½	95½
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	87	89½
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	83½	86
Southern California Gas Co.	First 6s	Nov. 1, 1960	97	100
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	88½	—
Washington Gas Light Co.	General 5s	Nov. 1, 1960	94	95
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	89	90½

Alexandria Votes $360,000 to Improve Public Utilities

The town of Alexandria, La., recently held an election on the question of issuing bonds to the extent of $360,000 for municipal improvements. The election was carried in favor of the proposition by a large majority, both in the number of votes and the valuation of property. There was a total of 538 votes cast.

The bonds are to provide for four different purposes. Of the total of $360,000, the city, in recognition of the importance of a gas plant, is to allow $110,000, or 30½ per cent, for this particular public service. The remainder is to go toward the improvement of water reservoir and mains, for purchase of fire department equipment, site and construction of fire department, and for the improvement of Seventh Street ditch and city drainage. Of the four projects, the gas plant is to receive by far the most liberal allowance.

Property valuation was voted: For, $2,474,772; against, $348,355. It was learned that 330 voters were in favor of the gas plant; against, 105.

Colorado Incorporation

The Federal Oil Syndicate, Inc.; $2,500; home office, Grand Junction. The incorporators are Frank E. Kimball, I. R. Lewis, Frank C. Holenbek, et al.

Way Clear for Utility Merger

Columbus, Ga. — The Railway Commission has granted the request of the Columbus Railroad Company to issue securities amounting to $5,129,000, to enable it to absorb the Columbus Power Company and the Gas Light Company of Columbus, as outlined in the merger program recently approved by the stockholders of the three corporations, according to word received here from Frank U. Garrard, counsel for the local Stone & Webster interests

The favorable action of the Railroad Commission which followed the granting by the Secretary of State of the application of the Columbus Railroad Company for authority to increase its capital stock from $1,289,340 to $4,928,700, was said yesterday by R. M. Harding, general manager of the three corporations, to be all that is needed to make the consolidation possible. Only the application for changing the name of the absorbing corporation to the Columbus Electric & Power Company is pending, it was stated.

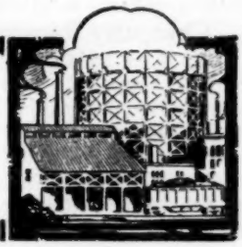
The issuing of the new securities will begin July 1, it was announced yesterday by General Manager Harding, who returned from Atlanta Friday night.

According to the application approved by the Secretary of State, $1,500,000 of the stock will have a par value of $20 a share; $2,000,000 will be first preferred, with a par value per share of $100; and $1,428,700 will be second preferred with a par value of $100 per share.

Refuse Gas Rehearing

Columbus, Ohio.—The State Utilities Commission has denied the second application of the city of Lima for rehearing of the rate case in which the commission granted the Lima Natural Gas Company a rate of $1 per thousand cubic feet.

NEWS OF THE GAS INDUSTRY



New York State Commercial Men to Meet

A meeting of the commercial section of the Empire State Gas and Electric Association will be held at the Fort William Henry Hotel, Lake George, on Thursday, June 29, and Friday, June 30. The committee expects this meeting to be an even greater success than the one at Cooperstown last year, in the point of numbers attending, in the official program and in the unofficial entertainment features.

Following the example set at the annual convention at Lake Placid last fall, sessions will be held only in the mornings, leaving the afternoons free for the enjoyment of the many diversions that the locality affords. For this reason it is strongly urged that the delegates arrange to arrive on the afternoon or evening of Wednesday, June 28, so as to be on hand for the opening of the meeting the next morning.

The attractions of Lake George need no advertisement. There are golf, tennis and motor trips; thereare bathing, boating and steamer trips on one of the most beautiful lakes in the country.

The program is as follows:

Thursday, 10 A. M.—Meeting called to order.
- Symposium report of subcommittee—S. Smith, chairman.
- Office Location—S. W. Murray, Binghamton Light, Heat & Power Company.
- Office Methods—O. E. Vieweg, Elmira Water, Light & Railroad Company.
- Rules and Regulations—R. W. Manier, Binghamton Gas Works.
- Standardization of Appliances—A. S. Andrews, Oswego Light & Power Company; E. L. Barnes, Binghamton Railway Company.
- Handling Service Complaints—W. F. Moses, Empire Gas & Electric Company; F. M. Houston, Elmira Water, Light & Railroad Company.
- Industrial Fuel Contract—H. B. Cleveland, Elmira Water, Light & Railroad Company.
- Discussion.
- Advertising—W. J. Reagan, Utica Gas & Electric Company.
- Merchandising and Soliciting—LeRoy Parmelee, Municipal Gas Company.
- Gas Water Heaters—F. A. Lemke, Humphrey Water Heater Company.
- Intensive Sales Campaign—H. B. Hindon, Humphrey Water Heater Company.

Friday, 10 A. M.—Meeting called to order.
- Industrial Business—E. L. Wilder, Rochester Gas & Electric Corporation.
- House Heating with Gas—W. A. Morris, Kings County Lighting Company; E. L. Wilder, Rochester Gas & Electric Corporation.
- Making Friends of the Public—E. C. Peebles, Rockland Light & Power Company.
- The New York State Committee on Public Utility Information, Merchandising and New Business Methods—A. M. Berger, Eureka Vacuum Cleaner Company.
- Intensive Electrical Merchandising—L. E. Cass, Hoover Suction Sweeper Company.
- Purchasing—W. A. Root, Bronx Gas & Electric Company.

Columbia Has Summer Course in Gas Making

A course in the manufacture and distribution of illuminating gas has been announced by Columbia University, New York City, for its summer session beginning July 10 and continuing until Aug. 18.

Prof. J. J. Morgan, a specialist in the utilization of fuels and manufacture of gas, will have charge of the course, which will be open to all who have had training in general chemistry or practical experience in the manufacture and distribution of gas.

There will be a total of twenty-eight or twenty-nine lectures, a dozen of which will be devoted to discussion of special topics by men prominent in the gas industry. Recent developments likely to produce changes in manufacturing practice will be treated in special lectures.

"It is planned," says Prof. Morgan, "to give in some twelve or fifteen lectures the theory of the manufacture and purification of illuminating gas, including a discussion of raw materials and by-products, and with illustrations from practice of standard forms of apparatus. Without overlooking developments and chances for further development on the mechanical side, it is intended to stress rather strongly the essential chemical nature of the processes."

William J. Hawthorn

William J. Hawthorn, superintendent of the Consolidated Gas Company's plant at Astoria, L. I., died suddenly of heart disease at his home there Sunday night. He was a native of this city, connected with the gas company for twenty-nine years and regarded as one of the most expert gasmen in the country. He is survived by his wife and son, Dr. William F. Hawthorn.

Greenville Gas Rates Go Up

Greenville, Pa.—A new gas rate went into effect here with a boost in charges of from 10 to 40 per cent. The rate previously was from 35 to 55 cents per thousand cubic feet. The new rate ranges from 50 to 60 cents, with a penalty added after non-payment for a specified period.

New Orleans Railway & Light Company Reorganizing

The New Orleans Railway & Light Company, which is to be completely reorganized by Oct. 1 of this year, is making final plans to wipe out $20,000,000 of common stock and probably more than half of the $10,000,000 of preferred stock. Rudolph Hecht, chairman of the committee representing the railway and light company 4½ per cent bonds, announced that final draft would be in shape within a few days.

The financial arrangements, including plans for an entirely new utility company in New Orleans, will be in strict accordance with all details of the reorganization plan accepted by the city commission council. In the course of reorganizing, it was learned, the company will relinquish its present name of the New Orleans Railway & Light Company and will probably be called the New Orleans Public Service Company.

Under the new plan it is said that provisions will be made for taking into the company at least $10,000,000 of new money and the several classes of securities of the present company will be allotted interests in the new corporation. It is generally understood that the entire issue of old common stock of $20,000,000 will be completely wiped out and the preferred stock of $10,000,000 will have a value of something in the vicinity of $5,000,000 after the reorganization has been completed.

At present the common stock of the company has almost no resale value, the New Orleans Stock Exchange selling the issue at about 12 cents a share of the par value of $100. On the other hand, the preferred stock has been selling at $10 and $20 a share on the par value of $1,000, and as it is to secure an equity of approximately $5,000,000 in the new corporation it will doubtless show a considerable increase after the final plans have been put into effect.

The arrangements for other securities, it is presumed, will follow the details accepted by the council commission in its compromise with the utilities company. According to this agreement, approximately $6,117,000 of Series A, 5 per cent junior securities were to be refunded into $5,129,000 of 6 per cent income bonds. These securities are now selling on a basis of 58 and are expected to become subject to an increase. The present 4½ per cent general mortgage bonds are to get $250 in cash and the balance in new 4½ per cent bonds. The issue is selling at 70, against 50 of a year ago. The new money will have precedence over the 4½ per cent bonds. and the underlying securities—amounting to $11,500,000—remain untouched.

"Everything has been done to get the plan through on schedule time," said Mr. Hecht, "and I expect reorganization will be put into effect some time in September. The new plan follows exactly the city reorganization plan except in the minor technical details."

Consolidated Gas to Redeem Bonds

New York, N. Y.—Announcement has been made by the Consolidated Gas Company of its intention to redeem at 102½ on Sept. 1 next all of the five-year secured 7 per cent convertible gold bonds outstanding at 102½ of the principal amount. It is expected that the company will shortly announce the issuance of new no par value capital stock and exchange of present $100 shares on a basis of two of the new shares for one of the old.

The formal statement issued by the company reads as follows:

"The Consolidated Gas Company New York announces that it will redeem on Sept. 1, 1922, all of its five-year secured 7 per cent convertible gold bonds outstanding on that date at 102½ per cent of the principal amount thereof.

"By the terms of the trust agreement under which the convertible bonds were issued a holder of any of the bonds has the right at his option on any interest day prior to redemption (or maturity) to convert the principal of such bonds into an equivalent amount, par value, of the company's common capital stock, and, upon the surrender of the bonds so to be converted, with all unmatured interest coupons attached, at the office of the trustee, the National City Bank of New York, the company will deliver, or cause to be delivered, in exchange therefor, certificates for such stock.

"As there is only one interest day, namely, Aug. 1, 1922, in the intervening period between the present and the date of redemption mentioned above, notice of the intention of the company to redeem the bonds is given at this time in order that holders may have ample opportunity to make arrangements to convert their bonds into stock on Aug. 1, 1922, when this privilege will expire.

"In due course the required notice of the intention of the company to redeem the convertible bonds will be published, in compliance with the provisions of the trust agreement."

Operating Income Increased More Than 60 Per Cent

New York, N. Y.—The annual report of the Associated Gas & Electric Company for the year 1921 disclosed a marked improvement in the financial position of the company. Operating income was $195,723, compared to $121,353 for 1920, an increase of over 60 per cent.

John I. Mange, president, in his remarks to stockholders stated, "Improved financing ability of your company resulting from these changes," speaking of adjustment of capitalization, "made possible the acquisition by New York State Gas & Electric Corporation in March, 1922, of additional properties in its territory which had net earnings after interest on bonds secured thereby during the twelve months preceding their acquisition amounting to $60,018. Including these earnings after taking account of increased interest charges incurred, balance available for dividends is equal to approximately three times the amount required therefor."

Elects New Officers

The New York State Gas & Electric Corporation, having gas and electric properties in Norwich, Cortland, Ithaca, Sidney and Oneonta, N. Y., recently elected officers as follows: S. J. Magee, president; G. A. Strain, vice-president; O. E. Wasser, secretary-treasurer. Former President J. I. Mange resigned in order to devote all of his time to his duties as vice-president of the J. G. White Management Corporation, New York.

Boston Consolidated Gas Co. Output

Boston, Mass.—Boston Consolidated Gas Company reports output for May, 1922, as 524,950,000 cu. ft., an increase of 2.7 per cent over corresponding month a year ago.

Would Consolidate Utilities in Washington

Washington, D. C. — A 5-cent carfare, with universal transfers; 80-cent gas, and 7½-cent electricity in the District for fifty years is the guarantee accompanying an offer about to be made to Congress by one of the strongest financial interests in the country, it has been learned in legislative circles.

The project, according to attorneys of the interests who have been before members of Congress, is part of an elaborate plan to develop Great Falls and the District.

To put the plan into operation it would be necessary for the Government to acquire by purchase or by condemnation proceedings the properties of the Washington Railway & Electric Company, the Washington Gas Light Company, the Potomac Electric Power Company, and the Capital Traction Company. It is then proposed that the leasing company shall operate these various companies and improve Great Falls, with the understanding that the street-car companies will charge a 5-cent fare, issue universal transfers, furnish commercial electricity at the rate of 7½ cents per kilowatt-hour and gas at the rate of 80 cents per thousand cubic feet, it was explained.

Through its attorneys the leasing company has offered to deposit as directed by Congress, any amount necessary to evidence good faith and insure the Government and the people of the District against loss, it was stated.

Members of Congress have been told that in the event these out-of-town interests acquire the street-car companies, lines will be extended into near-by States and the fares reduced in proportion to the reduction made in the city of Washington.

Representatives of the company making the offer assure legislators interested in the proposition that the constitutionality of the plan has been established in other instances and the question of securing control of the various corporations affected would merely require the Government's previous acquisition of them.

According to the plan as explained by a representative of the company, the stockholders in the various corporations would be protected against loss, and it was the impression of one member of Congress who has attended some of the caucuses where the project has been discussed that stockholders would be paid off by the Government should it decide to acquire the properties.

A member of the House District Committee expressed the belief that following the arrival of an attorney from Norfolk shortly a bill probably would be introduced as the first step to put the plan into operation. He stated that he had made a personal investigation of the financial responsibility of the company and found it to be backed by one of the richest interests in the world.

Absolute secrecy has surrounded the progress made by the proposed project among individual members of Congress, and not until recently was there the slightest indication that any change in the public utilities in the District was being considered.

It developed that ever since the Woods bill, to allow the street-car companies and the Potomac Electric Power Company to merge, was recommitted following opposition in the House based upon the fact that the bill was not sufficiently drastic, these interests have been offering members of the House District Committee the plan to consolidate the utilities corporations and develop the Great Falls project as a solution of the street-car problem.

Pacific G. & E. Consumers Increase

A. F. Hockenbeamer, vice-president of the Pacific Gas & Electric Company says there were 607,026 customers on the company's distribution system, at the close of April. This is an increase of 30,517 in the preceding twelve months; the gain in customers the first four months of this year being 8,057, compared with a gain of 7,150 in the same period the preceding year.

The income account for the four months ended April 30, 1922, shows an increase of $217,064 in gross revenue to $13,032,986 and a decrease in operating expenses, including taxation of $321,301 to $7,905,477. As a result net income shows an increase of more than $38,300 and is shown to be $5,127,509 for the four-months period.

Incorporate Gas and Electric Company

New York, N. Y.—Articles incorporating Queens Borough Gas & Electric Company have been filed with the Secretary of State. It is proposed to manufacture and supply gas for lighting and electricity for light, power and heating purposes, throughout the State. The capital stock is $2,000,000. The directors for the first year are John L. Lockwood, Jr., H. Julian, R. Lockwood and Frederick Delafield, of New York City; Charles E. Wilson, of Jersey City, and Thomas Ferry, of Tompkinsville.

The above-named corporation has been formed to take over the plant and franchise of the Queens Boro Electric Light, Heat & Power Company, and the Town of Hempstead Gas & Electric Light Company. It now controls the street and private lighting of Far Rockaway and Rockaway Beach. As soon as the organization is completed it is said that a working board of directors will be elected.

Family Jar Gets to the Gas Office

An irate customer called the other day on a gas water-heater company and wanted them to buy back a heater he had recently purchased. He said it was a great service, but too rich for his income.

"My gas bill was $15 last month," he complained.

The heater company investigated and found that the highest gas bill the complaining citizen had paid was for $6. Then he called at the home where the heater had been installed.

"Was he downtown kicking about that?" inquired the customer's wife. "You know how it is. We were having a little discussion of expenses and I told him the gas bill was $15. Of course, I knew it was only $6, but I never thought he would make a kick to the company."

Montana Oil Field Improving

The week ending June 10 saw the completion of a second producing well on the Sweetgrass arch structure, Toole County, Mont., and as a result northern Montana is all excited, lease values ranging from $200 to $600 an acre. Many wells are being spudded in.

Opening New District Sales Office

The Iron Products Corporation of New York and its subsidiaries, the Central Foundry Company, Central Iron & Coal Company, Central Radiator Company and the Molby Boiler Company, announce the opening of a district sales office in the Jefferson County Bank building, Birmingham, Ala.

T. C. Hyde will be manager of the new office, under the direction of J. L. Brierton, vice-president and general manager of the Central Iron & Coal Company. Mr. Hyde will continue the sale of "Universal Pipe" in the Southern territory which he handled from the Central Foundry Company's Atlanta office, now discontinued.

W. Z. Reynolds, whose headquarters have heretofore been in Chattanooga, will continue, from the new office, the sale of "Tuscaloosa" and "Warrior" pig irons, "Holt" foundry and furnace coke, and other products of the Central Iron & Coal Company.

It is announced with pleasure that Hewitt Thompson, who is well known to the plumbing and heating trade in the Birmingham district, will sell "Radio" open fireplace hot water radiators, "Radex" magazine-feed downdraft boilers (steam and water) for small houses, soil pipe and fittings, "F. & W." revent and drainage fittings and other heating and plumbing specialties of the Central Foundry Company and the Central Radiator Company.

Little Conflict in Use of Gas and Electricity

The use of manufactured gas continues to increase and its use in the home and industry shows little conflict with electricity, John A. Britton, vice-president and general manager of the Pacific Gas & Electric Company, said in a recent address delivered at Princeton University.

"When electricity was first introduced in 1879 everyone prophesied the downfall of the gas companies of the United States," said Mr. Britton. "It was thought that electricity would take the place of gas for illuminating purposes, the only purpose for which it was being used at that time.

"In 1885, a scientist named Auer von Welsbach invented the burner that is now so well known by his name, and immediately, by reason of its economy, gas once more became a factor in lighting. When incandescent electric lighting was first introduced to the world, again was gas threatened. From that day new uses were discovered for it, both with respect to its utilization in gas engines and in gas stoves for domestic purposes, and again was the day saved to gas. During the later years great progress has been made in the use of gas for industrial purposes or wherever heat is required."

A recent survey made by the American Gas Association shows that the consumption of gas in the United States has doubled in the last ten years.

Gas Rates Increased

Elmira, N. Y.—The Public Service Commission has fixed the new gas rates for Elmira at 78 cents per thousand cubic feet, effective June 1. This increase will also affect the residents of the towns of Southport and Elmira Heights. The present rate is 76 cents a thousand feet.

The commission denied the company's petition for a reconsideration of electric light rates. In March, 1921, the commission fixed the electric light rate at 8 cents a kilowatt for the first twenty hours and 6 cents a kilowatt over twenty hours.

Consolidated Gas to Redeem Bonds

New York, N. Y.—Announcement has been made by the Consolidated Gas Company of its intention to redeem at 102½ on Sept. 1 next all of the five-year secured 7 per cent convertible gold bonds outstanding. It is expected that the company will shortly announce the issuance of new no par value capital stock and exchange of present $100 shares on a basis of two of the new shares for one of the old.

The formal statement issued by the company reads as follows:

"The Consolidated Gas Company of New York announces that it will redeem on Sept. 1, 1922, all of its five-year secured 7 per cent convertible gold bonds outstanding on that date at 102½ per cent of the principal amount thereof.

"By the terms of the trust agreement under which the convertible bonds were issued a holder of any of the bonds has the right at his option on any interest day prior to redemption (or maturity) to convert the principal of such bonds into an equivalent amount, par value, of the company's common capital stock, and, upon the surrender of the bonds so to be converted, with all unmatured interest coupons attached, at the office of the trustee, the National City Bank of New York, the company will deliver, or cause to be delivered, in exchange therefor, certificates for such stock.

"As there is only one interest day—namely, Aug. 1, 1922—in the intervening period between the present and the date of redemption mentioned above, notice of the intention of the company to redeem the bonds is given at this time in order that holders may have ample opportunity to make arrangements to convert their bonds into stock on Aug. 1, 1922, when this privilege will expire.

"In due course the required notice of the intention of the company to redeem the convertible bonds will be published, in compliance with the provisions of the trust agreement."

To Buy Gas Company

New York, N. Y.—Consolidated Gas Company is negotiating for the acquisition of the gas manufacturing and distributing system and all other property of the New York Mutual Gas Light Company. A special meeting of the stockholders of the Mutual has been called for June 30, when stockholders will be asked to vote on the sale of the properties as well as the dissolution of their company. More than a half interest in the Mutual is owned by the Consclidated, but under its charter, the Mutual is not permitted to merge with another corporation. Consequently, any turning over of its properties must be through actual sale.

It is understood that about 90 per cent of the 34,097 shares of outstanding Mutual stock have agreed to the sale plan. It is believed that the consolidated organization will pay approximately $9,000,000 for the Mutual properties, which would be somewhere around $260 a share on the Mutual stock.

Construction Notes

Several carloads of steel have been delivered to the plant of the Interstate Public Service Company, New Albany, Ind., which will be used in the construction of the new 300,000 cu. ft. storage holder. A very interesting feature of this construction is the use of a large amount of piles driven to refusal with the overlaying concrete foundation, heavily reinforced by a steel grillage. This holder is being erected by the Western Gas Construction Company.

The Illinois Power Company is equipping its Springfield carbureted water-gas apparatus with hydraulic operating mechanism, and to that end has placed orders with the U. G. I. Contracting Company, Philadelphia, Pa.

The new 7-ft. water-gas set, with hoist and high-speed blower, recently ordered by the Wisconsin Traction Light, Heat & Power Company, Appleton, Wis., is now being installed by the erection crew of the Western Gas Construction Company.

Among the recent contracts awarded to the U. G. I. Contracting Company, Philadelphia, Pa., is that of the Worcester (Mass.) Gas Light Company for a 11-ft. cone-top carbureted water-gas apparatus, including the latest U. G. I. improvements.

Erection work is going on very rapidly on the new water-gas set at the plant of the Griffin (Ga.) Gas, Ice & Cold tSorage Company, and will soon be completed. This set was furnished and is being built by the Western Gas Construction Company.

The Pacific Gas & Electric Company, 445 Sutter Street, San Francisco, Cal., plans to build an office building on Market Street at a cost of about $1,250,000.

The Warsaw (N. Y.) Gas & Electric Company has awarded a contract for an 80 by 80 by 104 ft. power-house to be built at Rock Glen Salt plant, to the Oatka Engineering & Construction Company, of Warsaw. Cost is estimated at about $40,000.

The Orlando (Fla.) Water & Light Company, which manufactures water gas to supply the city of Orlando and vicinity, has had a greatly increased demand for gas and has placed a contract with the Gas Machinery Company, Cleveland, Ohio, for the complete installation of a new 7-ft. carbureted water-gas apparatus complete with reverse steam connections, gauge board and connections, safety blast check valve and equipment, steam and air meters, pyrometer, generator charging apparatus and overhead brick operating floor. The contract also includes moving the purchaser's present condenser and exhauster, the installation of a new No. 6 Roots exhauster with self-oiling engine and flexible coupling, tar washer, P. & A. tar extractor, connections and auxiliary equipment. Two 15-ft. diameter by 12-ft. deep duplex outdoor-type steel purifiers, complete with self-sealing covers, hoisting apparatus for covers, trays and tray beams and connections, will also be installed to take care of the increased make of gas.

Magnesite Production in 1921

Reports received by the United States Geological Survey, Department of the Interior, from producers of magnesite show that the quantity of crude magnesite sold or treated during the calendar year 1921 was 47,904 short tons, valued at the mines at $510,177. This quantity was less than half that for the year 1920, and smaller than that for any year since 1916. California was the only producing State, and nearly all the product was calcined for use as plastic material. The output of domestic magnesite for use in refractory products was very small.

In contrast to the large decrease in domestic production there was an increase in imports, which consisted chiefly of crude magnesite. The apparent consumption of magnesite in the United States in 1921 was equivalent to about 113,500 short tons of crude magnesite, 58 per cent of which was imported. This consumption is the lowest recorded for many years, probably largely because of conditions in the metallurgic industries, which consume, in the form of refractory material, most of the magnesite used.

Gas Securities Company Sues Irrigation Companies

The Gas Securities Company filed suit in the United States District Court at Denver, Col., June 9 against the Nile irrigation district and the East Denver municipal irrigation district.

The complaint in the Nile case sets forth that the defendant company Dec. 1, 1908, issued bonds, of which the Gas Securities Company purchased 1,326 of a value of $500 each.

It says that on Aug. 3, 1914, the Gas Securities Company filed a complaint in the United States District Court to recover judgment for the value of the bonds, to which the Nile company answered that the bonds had been illegally issued and that it was not responsible.

On Aug. 3, 1916, the United States District Court held the bonds to be legally issued and valid, the complaint states.

The case was appealed to the United States Circuit Court of Appeals, which upheld the judgment of the lower court. In the complaint it is alleged that the defendant company has refused to pay. Judgment is asked of the Nile company for bonds totaling $267,690, now alleged to be due, and interest, and for $120,000 now claimed to be due on matured bonds.

The complaint in the East Denver case alleges that the Gas Securities Company owns 1,264 bonds of $500 denomination of the East Denver Municipal Irrigation Company. On March 12, 1917, the Gas Securities Company filed suit to recover these bonds and on May 8, 1919, the United States District Court rendered judgment favoring the Gas Securities Company. Since then the irrigation district has refused to pay, the complant states. It asks judgment for $249,230 and interest at 8 per cent. The Gas Securities Company has no connection with Doherty & Co.

Asks for Bond Issue

Newburyport, Mass.—The Newburyport Gas & Electric Company has applied to the Department of Public Utilities for authority to issue $650,000 of first mortgage 5s of 1942, series A, to be sold at not less than par. Subject to such approval, the company invites proposals for its bonds, to be received by its treasurer, Fred C. Abercrombie, at 70 State Street, before 11 a. m., June 22.

Seek to Erect Holder for Natural Gas

Ashtabula, Ohio.—"It is absolutely necessary that the city council make all possible haste in taking action on the gas situation in Ashtabula," F. W. Stone, manager of the Ashtabula Gas Company, told the city council at a meeting recently.

"The situation is very grave," Mr. Stone said, "and unless some provision is soon made to obtain an adequate gas supply there may be much suffering in the city next winter.

"The most feasible plan to remedy the situation would be to construct a holder in which gas may be stored during the night, when little gas is being used, so that a reserve supply may be turned into the mains to meet the heavy drain in the morning and at noon.

"It would hardly be advisable to construct the holder, however, unless some provision were made for an artificial gas plant, for Ashtabula must ultimately come to that. The natural gas supply is daily growing less, and unless some new fields are opened, which is very doubtful, the natural gas supply will soon end. In fact, if new fields are not opened before next fall the present supply will not be adequate to meet the situation.

"With the artificial plant, it would be possible to supplement the natural gas supply."

"It would cost about $100,000 and take approximately six months to build a holder with a capacity of a million cubic feet," Mr. Stone said in answer to Councilman Rinto's question.

"The holder and plant, if they are built, would have to be built by the city," Mr. Stone said, "for the gas company is not financially able to do so. With a certain fixed charge, such as a readiness-to-serve charge, the company would be able to lease the plant from the city. With a franchise drawn on these lines for a term of ten years or so the city would be assured a rate of return. In other words, the city would loan its credit to the gas company.

"There is, of course, a possibility that additional pools may be found in Ashtabula. This has already been done four times, but it is only a matter of chance.

"The average daily gas consumption is about three-quarters of a million cubic feet," Mr. Stone said. "The heaviest demand comes at about 9 o'clock in the forenoon."

When asked for comparative costs of gas and electricity, Mr. Stone stated: "One dollar's worth of natural gas will do as much as nine dollars' worth of electricity at Ashtabula rates, or two dollars' worth of artificial gas will do as much as nine dollars' worth of electricity at the rates in effect in Ashtabula."

Power Companies to Consolidate

Another step in a long succession of consolidations, combination and absorptions that have marked the development of the water, light and gas business in Reno and western Nevada will take over all the holdings of the Reno Power, Light & Water Company and the latter company will cease to exist.

The deal, which involves in capital stock and bonds $1,750,000, is nothing more than a move to simplify bookkeeping and internal operations of the two companies as the Sierra Pacific Electric Company, the holding company, owns all the stock in both concerns and they have been operated practically as one for several years.

The Reno Power, Light & Water Company furnishes water, power and gas to Reno, Sparks and the immediate surrounding country, while the Truckee River General Electric Company furnishes power to Carson City, Virginia City, Carson Valley, Mason Valley and other points in western Nevada. The later company owns the Farad, Fleish and Verdi power plants, while the Reno company owns the Reno and Washoe power plants.

Application was made yesterday by the Truckee River General Electric Company to the Public Service Commission for a certificate of public convenience permitting it to furnish electric, gas and water service to the communities now served by the Reno Power, Light & Water Company. A hearing will be conducted in Reno on June 21 at the Chamber of Commerce.

Prior to 1898 Reno was served with power, gas and water by three separate companies, including the Reno Electric Company, the Reno Water Company and the Reno Gas Company. These companies were combined into the Reno Land, Light & Water Company and in 1902 the Nevada Power, Light & Water Company came into existence taking over the holdings of the former company, and in 1904 the Nevada company was reorganized and called the Reno Power, Light & Water Company. In 1905 the power plant and holdings of the Washoe Power & Development Company, operating the Washoe power plant was purchased by the people owning the Reno Power, Light & Water Company and in 1912 a consolidation was effected.

This left in the field the Truckee River General Electric Company and the Reno company. In 1912 the former company was reorganized by adding the word "the" to the title and in the meantime the Sierra Pacific Electric Company acquired all the stock of both companies.

Bailey Gas Company Granted New Rates

Charleston, W. Va.—The Bailey Gas Company, serving consumers near St. Mary's, Pleasants County, has been granted permission to change rates, by order of the Public Service Commission. This case was retired by the commission on Sept. 27, 1921, because of failure of applicant company to furnish information requested.

The new schedule for domestic consumers is 32 cents per thousand cubic feet, less 2 per cent for payment within discount period. For gas engines, 32 cents for the first 500,000 cu. ft. and 5 cents less for all over that consumption, less a discount of 1 cent. For individual consumers, the same price as for gas engines and the same discount where payment is paid before the twentieth of the following month. The schedule was made effective on and after meter readings for May, 1922.

The petitioning company serves 83 consumers and the service was stated as merely incidental to the development of the company's oil properties in the community served. Sixty-two of the consumers were represented by petitioner as having signed a petition asking that the commission grant the higher rates.

The commission entered another order granting the application of the Northern Virginia Power Company for right to acquire additional lands for the construction thereon of towers, poles and wire lines for the transmission, supply and sale of electrical or other energy.